James E. Hines
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(Editors)

Surveys of geese and swans in the Inuvialuit Settlement Region, Western Canadian Arctic, 1989–2001

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Abstract

The Inuvialuit Settlement Region of the Western Canadian Arctic is one of the most important breeding areas for geese and swans in North America. As well as being of international conservation significance, the waterfowl from the Inuvialuit Settlement Region make up an important part of the subsistence diet of the local Aboriginal people, and the spring waterfowl hunt is a cultural tradition of the Inuvialuit. To establish appropriate baseline population estimates for future comparisons and long-term management of sustainable harvests, a number of goose and swan surveys were conducted in the region between 1989 and 2001. The studies reported in this Occasional Paper include (1) aerial surveys on the mainland Inuvialuit Settlement Region to determine the distribution and abundance of Black Brant *Branta bernicla nigricans*, 1995–1998, (2) aerial surveys of breeding and moulting Brant on Banks Island, 1992–1994, (3) aerial counts of Greater White-fronted Geese *Anser albifrons*, Canada Geese *Branta canadensis*, and Tundra Swans *Cygnus columbianus* on the mainland Inuvialuit Settlement Region, 1989–1993, (4) Inuvialuit local knowledge about populations and important areas for waterfowl near the communities of Sachs Harbour on Banks Island and Holman on western Victoria Island, (5) monitoring numbers of Lesser Snow Geese *Anser caerulescens caerulescens* at the small and vulnerable mainland colonies at Kendall Island and Anderson River Migratory Bird Sanctuaries, 1996–2001, and (6) an investigation of visibility correction factors for helicopter transect counts of waterfowl.

The surveys greatly enhance our knowledge of the distribution, abundance, and productivity of geese and swans in the Western Canadian Arctic. The results are interpreted in conjunction with what we know about the status, harvest, and variety of environmental pressures acting on these populations — both within the Inuvialuit Settlement Region and elsewhere in North America. At a continental level, most species are currently harvested near the maximum allowable level, and this, along with other stressors acting during the fall–winter period, may negatively impact several local populations that are declining or already exist in low numbers. On the breeding grounds, proposed oil and gas development and global climate warming are relatively new threats that could cause additional conservation problems. A number of information needs and recommendations to enhance the management of the waterfowl populations of the region are presented.

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Introduction

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The Inuvialuit Settlement Region of the Western Canadian Arctic (Fig. 1) is one of the most important breeding grounds for waterfowl and other migratory birds in North America (Bellrose 1980). Large numbers of Greater White-fronted Geese *Anser albifrons*, Black Brant *Branta bernicla nigricans*, Canada Geese *B. canadensis*,[1] Lesser Snow Geese *Anser caerulescens caerulescens*, Tundra Swans *Cygnus columbianus*, King Eiders *Somateria spectabilis*, Common Eiders *S. mollissima*, shorebirds, and other species breed within this region (Bellrose 1980; Alexander et al. 1988; Johnson and Herter 1989). Many species of waterfowl are harvested by local residents for subsistence purposes (Bromley 1996; Fabijan et al. 1997), and so the Inuvialuit are concerned about the management of regional populations of these waterfowl. General national and continental concerns about the status of many species further emphasize the need for careful management.

The Inuvialuit Final Agreement entitles the Inuvialuit to special involvement in managing wildlife in the Western Arctic (Committee for Original Peoples Entitlement 1984).[2] The settlement of the Western Arctic Claim has facilitated increased research on and improved monitoring of migratory birds and has led to many population studies of waterfowl and other bird species in the region since the late 1980s (Fig. 1). Although most studies were driven by the uncertain status of or particular concerns about certain species, a multispecies approach has been used to acquire population information on a number of other species as well. Results from some of these investigations have been reported elsewhere (Dickson 1997; Kerbes et al. 1999; Hines et al. 2000; Samelius et al. in press).

This report documents the results of monitoring and inventory studies of Black Brant, Greater White-fronted Geese, Tundra Swans, Lesser Snow Geese, Canada Geese, and related species during various periods from 1989 to 2001. This information is essential for current management of bird populations at both regional and continental levels. Most studies establish important baselines for monitoring the long-term well-being of these populations.

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[1] The traditional classification of Canada Geese as a single species (Bellrose 1980) has been retained throughout this paper. Thus, we treat Canada Geese as including both *Branta canadensis* and *B. hutchinsii*, as described in the most recent revision to the American Ornithologists' Union checklist (Banks et al. 2004).

[2] The Inuvialuit Final Agreement affects a 1.18 million square kilometre area (the Inuvialuit Settlement Region) in the northern Northwest Territories and Yukon. As a requirement of the Inuvialuit Final Agreement, a cooperative wildlife management system (involving Inuvialuit and territorial and federal government representatives) has been established for the region. A primary function of the comanagement system is to provide guidance to government wildlife conservation and resource management programs.

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Figure 1
Areas in which aerial surveys for waterfowl and other birds were conducted in the Inuvialuit Settlement Region, 1989–2001. Results from the surveys are presented in this report, except for those from Victoria Island, which were presented in reports by Dickson (1997) and Hines et al. (2000).